In the majority of cases the pyelonephritis is upon the right side. This is due to the fact that although both ureters are compressed by the uterus during pregnancy, the right ureter is more compressed than the left, as the result of the rotation of the uterus on its long axis from left to right and the greater frequency of positions in the right oblique diameter. The most frequent abdominal conditions which begin so acutely are cholecystitis, stones in the common bile duct, and appendicitis. These can be readily excluded by the absence of localized muscular rigidity and tenderness over the respective areas, and the fact that high fever preceded by chills is only characteristic of common duct stones.

5. PYELONEPHRITIS IN THE PUERPERIUM. This, like the similar condition in pregnancy, may begin very suddenly, without prodromal symptoms like those of cystitis. In the majority of cases the source of the infection in all probability is in the bladder. In only a small number is the infection a descending (that is, a hematogenous) one. The patient may have made an excellent recovery from the parturition with normal temperature, pulse, and lochia. Then suddenly she has a chill, followed by high fever, rapid pulse, and a marked leukocytosis. The fever either persists or recurs irregularly following a chill.

In some cases there is marked pain over the affected kidney (in the lumbar region) and along the ureter. In others there are absolutely no localizing symptoms referable to the kidney. This syndrome may occur during the first few days or several weeks after parturition has occurred. Pus in a variable quantity is usually present in the urine; and in some cases there is vesical tenesmus and pain on micturition, but these two symptoms are not constant. The diagnosis in these cases must be made by excluding any of the pelvic complications following infection during or soon after parturition. If the pelvic examination yields negative results, an infection of the kidney should always be thought of as a frequent cause of fever during the puerperium. The clinical picture just described, of a sudden onset with chill, fever, etc., does not fit all cases. In some, the only symptom to attract the physician's attention is rise in temperature, especially toward evening, for which no cause can be found in the genitalia Palpation of the kidney in both of the above types often reveals considerable tenderness, especially on bimanual palpation. The organism which causes the pyelonephritis is the colon bacillus, and the starting point is without doubt an intestinal infection, especially in those cases in which any instrumental infection of the bladder can be excluded.

THE OPERATIVE TREATMENT OF DEFLECTION OF THE NASAL SEPTUM.

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The consideration of the proper operative treatment for the restoration of the deflected nasal septum is only secondary in importance to that still important question as to the justification of the operation in any individual case presenting itself for consideration. Since attention was first called to the deflection of the septum, and the possible influence that bending of the septum—obstructing one or both of the nasal chambers more or less completely—may play in the causation of certain pathological changes in the nasal cavities, the ingenuity of rhinologists has been taxed to overcome this deflection with the restoration of the septum to a normal vertical plane.

The nasal septum is a thin plate of cartilage and bone covered with mucoperichondrium and mucoperiosteum, and separates the nose into two nasal cavities. The mucoperichondrium and mucoperiosteum are very loosely attached to the bone and periosteum, except at sutural borders and where from traumatism it has formed adhesion. This structure is composed of the quadrangular cartilage, the vomer, and the perpendicular plate of the ethmoid. It should be placed in a vertical plane in the nose to be in an absolutely normal position. Through the action of various agents the septum becomes subject to alteration from the normal plane; when this change is so excessive as to obstruct one or both nasal cavities, or bring it into contact, more or less constant, with one or more of the turbinates, the condition becomes pathological. The changes in the septum may be such that there is a simple bending of the septum without any thickening; at other times the deflection is attended with increase in its later dimensions, which latter may assume the form of thickening at the point of greatest bending or the formation of a distinct ridge or spur.

Etiology. The etiological factors which produce deviation of the septum may be classified under four headings: Developmental, obstructive, traumatic, and diseases of a general or local nature.

Developmental. This factor no doubt plays quite an important role in the causation of deflection of the septum. The septal constituent parts not ossifying with equal degree of rapidity, and being in excess of the normal space allotted to them, cause, naturally, a bending of the later ossifying bone or the least resisting constituent of the group making up the septum.

Obstructive. Conditions causing obstruction to the air current through the nasal cavities impair the development of these chambers and the constituent bones that enter into their formation. At the same time there is frequently an increase in the arch of the hard palate, leaving, consequently, less vertical space in the nose within which the septum must form.

Traumatic. Direct violence of great force is frequently sufficient to fracture the bones of the septum, causing displacement of them with resulting deflection; or by separating the quadrangular cartilage from its attachment to the vomer and ethmoid it causes luxation of the latter, with resulting deflection of the structure. Mild blows, frequently repeated, received throughout childhood, cause occasionally displacement, but most frequently thickening along the sutural borders.

Diseases of a General or Local Nature. It is stated that syphilis and rachitis are factors in developing deflections, but wherein they can be causative agents I have never been able to see. Local inflammatory disturbances producing adhesions in the young and newgrowths are infrequent causative agents.

SYMPTOMS. A deflected septum in itself is not a pathological condition. The deflection becomes pathological only when it causes impairment of the function of the nose either through partial or complete arrest of the air current through one or both of the nasal cavities, or when through pressure upon the turbinate bodies, intermittent or continuous, the cause interferes with the performance of the normal functions of these bodies; or, when through one or both of these disturbing causes, a certain train of symptoms is produced which are usually designated as reflex.

It is not always possible to come to an immediate conclusion wherein and how far a deflected septum is giving rise to symptoms. The compensatory function of all organs of the body is so great that often gross pathological lesions apparently cause no marked alteration of function. This compensatory function in the nose is well marked, so that ofttimes marked deflection causing complete obstruction of one nasal chamber apparently gives rise to no inconvenience to the patient. At other times, when the objective evidence is not very pronounced, most frequently when the whole plane of the septum is bent toward one cavity, narrowing but not markedly obstructing the affected side, the disturbance to nasal breathing and the general health of the patient is very marked. At times it is very simple to observe the necessity for operative intervention. The obstruction is patent and the subject evidence, as described by the patient, is positive. Those cases with moderate deflections and marked vasomotor disturbances also tax the skill of the diagnostician, as regards the relation of cause and effect. Oftentimes it becomes necessary to examine a patient several times, at intervals, under different conditions, to come to a safe and sure opinion. Indeed, at times, when a septum has been operated upon after one had somewhat of a struggle to come to the operative opinion, one will find, well back beyond the deflection, prominent ridges or spurs, which projected into the turbinate, and which were entirely hid from view by the deflected portion of the septum. At the present day, when operative intervention about the septum has become so common, it is well that one consider the case quite thoroughly as to the extent of the deflection, as to its impairment of respiration, how far it influences pathological changes within the nasal cavity, and to what extent the reflex symptoms present in the individual case can be associated with the deflected septum.

The only condition which may stimulate a deflected septum and would possibly deceive one who is competent and skilful enough to perform this operation is a gumma of the septum. I recently saw a gumma involving the cartilaginous septum in the upper two-thirds of its extent on one side, which had been brought to me for operation. On the deflected side there were the evidences of deflection, as shown by the rounded gumma; on the other corresponding side of the septum there was a flat, plane surface. An indefinite history of syphilis was obtained. Three months later I saw this patient with a perfectly flat septum on both sides.

TREATMENT. In the early period of nasal surgery it was recognized that the deflected septum played an important role in the impairment of function and the causation of certain pathological changes, so that rhinologists early sought methods to overcome this condition. The early attempts at correction were vain, and more failures by far were the result of operative treatment than improvements—very few good results. Various forms of penetrating punches, as well as stellated cutting forceps, were used at that time, with solid metallic or ivory splints to retain the so-called straightened septum. Then came the operation of Roberts, the cutting of the septum and pinning the septum into its new position. We next find the varying types of cutting and crushing operation, which had for their purpose the destruction of the resiliency of the septum, thus restoring it to the vertical plane, where it was retained by splints in its new position until the attempt had proved a success or failure. The cases that resulted favorably through this method of operation were those that permitted the riding over of the fractured fragments. The redundant septum thereby reduced itself so that it could more nearly approach the normal type. Under this class would be included the Asch, Roe, and other operations too numerous to mention.

The operations for deflection of the septum, done under the plan suggested by Asch and Roe, yielded often excellent results in the hands of the projectors of these operations; nevertheless, in the hands of others who essayed this form of operation, failures and untoward results were as frequent as successes. It has been my experience to re-operate upon a number of cases subjected to this form of operation, in which nothing seemed to have been gained by the former operative procedure. Later came special modifications of these operations, all being an improvement on the previous more or less blind, crushing method, and each, in certain types of deflection, being attended with most excellent results. Under such groupings may be classified the Kyle, Watson, Gibbs, and others following out the same general technique. All the above-mentioned operations have in common the cutting, or cutting, sawing, and fracturing of the displaced septum, thus removing redundant tissue or permitting the over-riding of the fragments and reducing thereby the redundancy of tissue, and leaving, after healing, a replaced, firm septum in its normal anatomical integrity.

During the greater portion of this period there had been gradually developing a type of operation which had for its purpose the removal of the deflected portions of the septum, whether cartilaginous or osseous, or both, through a submucous method, leaving a straight, although a partially flaccid septum. Through the efforts of Myles, Killian, Hajek, Freer, and others, this method has been perfected in the last five years, and, as perfected, has been accepted by the greater portion of the rhinological world as the operation for the correction of misplaced septa. Those operators who had gained the greater portion of success in their operative cases through the employment of one or more of the previously designated operations were rather loath to accord fellowship to the new—to them untried—method of operating.

The objections raised against the new operation were: (*a*) The possibility of lowering the plane of the dorsum of the nose; (*b*) the great possibility of causing perforations through the new method of operating; (*c*) the question as to the advisability of replacing a normal osseocartilaginous septum with a semiflaccid septum; and (*d*) the recognized difficulty of the technique, and the time consumed in the operation. Previous to 1904 I had done all my operative work upon the septum by a method that had given me a more than fair degree of successful issue. For several years failure in operative treatment, with restoration of the septum to a normal or nearly normal plane, was rather infrequent by my method. I was, therefore, uncertain as to the advisability of relinquishing my previous method for the new doubtful one. My operative procedure had for its purpose the removal of a narrow, linear wedge-shaped segment of bone from the osseous septum at the juncture of the vomer with the floor of the nose, through the use of a Fetterolf saw; the separation through sawing, or partially sawing, and then fracturing the nasal spine; cutting through the whole anterior border of the quadrangular cartilage just behind the columna, continuing this incision along the superior border to the degree necessary; the operation being completed by fracturing the anterior extremities of the vomer and ethmoid, when found necessary.

Always after this method of procedure the septum would fall into a normal vertical plane.

The test of the probable success of any of these forms of operative procedure is the fact that the septum will assume the normal vertical plane after the operation is done—retaining apparatus only being necessary to prevent displacement. In this operation, as well as all other operations done upon the septum, the individual case and its requirements should be the controlling factor which should govern the operation, that is, as to the character of the incision, the length of the incision, the amount of bone to be excised, and other details; one detail, however, should never be forgotten, and that is, sawing through and loosening the nasal spine. The retaining apparatus employed in my cases is the Kyle aluminum splint, which is worn continuously for about seven days. This operative procedure presents certain features that were original creations of mine. The fracture of the spine had been suggested and acted upon by Harrison Allen, who rightly considered it essential to the success of the operation. Allen's method of attacking the spine was by an incision made through the gingivolabial border of the upper lip. I attack the spine through the floor of the nose by means of a saw, either sawing through it completely, or partially, and then fracturing it by the use of forceps. The continuous wearing of the retaining apparatus for a week or ten days was first suggested to me. After demonstrating to my satisfaction the advisability of this method over the old procedure of frequent removal and introduction, I presented it to the profession in a paper read before the meeting of the American Laryngological, Rhinological, and Otological Society, held in Pittsburg on May 11 and 12, 1898.

Although my results had been unusually good through the former method of operation, there were yet a sufficient number of unfavorable results to wish for some operative procedure that would, with the execution of proper skill, give uniformly perfect results. As the literature seemed to bear testimony to uniform results following the submucous method, I determined to direct my attention to it.

I will briefly describe the submucous method for those not versed with its technique. The operation is most frequently done under cocaine anesthesia, either through the laying of pledgets of cotton saturated with a 10 per cent. solution or the rubbing in of the crystal of cocaine, or through the hypodermic injection of a solution of cocaine beneath the mucous membrane. The mucous membrane is also rendered ischemic through the use of suprarenal or adrenalin. After the anesthesia and ischemia are complete, a vertical incision is made through the mucous membrane and the perichondrium of the septum in that nasal cavity into which the bending of the septum presents itself. I find it preferable to incise into the cartilage in the primary incision, as well as to use the index finger in the other nasal cavity as a guide and safeguard against carrying the incision too far. Some operators have a rule to make the primary incision in that nasal cavity in which the convexity of the deflection presents itself; other operators always from the left nasal cavity, whether it presents the concavity or convexity of the deflection. It is more convenient to operate in the left nasal cavity, as one must be expert with the use of the left hand to operate in the right nasal cavity. There is no doubt that it is preferable to operate in that side which presents the convexity.

Many, following the teaching of Killian, make a vertical incision from the dorsum, about 0.5 cm. posterior to the columna, extending to, if not including, the floor of the nose; others make the incision slightly curvilinear, but follow the same outline. Others, following the teaching of Freer, make the incision in the form of an inverted capital L over the point of greatest projection. In my early work, I followed the Killian incision, but latterly I have made the incision quite well forward, leaving only a narrow strip of cartilage between the line of incision and the columna. This has the especial advantage in that, in case a puncture is made through the perichondrium and mucous membrane when incising the cartilage, one may make another cartilaginous incision a millimeter or more farther back, and from that point raise the mucous membrane and perichondrium on the opposite side. Indeed, the deflection may be so placed as to render it necessary to make the incision directly posterior to the columna. I have never attempted the Freer flap. From the manner in which I have seen flaps retract when broken at their lower angle, and the absolute inability to draw them down so that they in any way come over the surface of the opposite flap, I should judge that Freer's flap must leave a large surface to cover by granulation.

The next step in the operation is the raising of the mucoperichondrium. The starting of the perichondrium is really the crucial point of the operation, for, as this is well done, so is the operation a success or a failure. A half sharp elevator is used for the beginning of the work. Care, patience, and the employment of plenty of time is requisite in this procedure. It is usually best to commence at the upper end of the incision, for here the soft structures are free from irritation, and will consequently separate with greater facility. One should gradually insinuate the half sharp separator between the soft tissues and the cartilage along the posterior border of the incision until he finds it raising the perichondrium slightly, then gradually work downward, producing the same degree of separation until the floor of the nose is reached. If the primary incision, at the lower point, or at any point, is not through the perichondrium, one is very apt to tear the flap at the point of non-separation. After separation is made throughout the whole length of the incision and backward for about 0.5 cm. with the half sharp separator, the final separation is rapidly finished with the employment of the full, rounded separator, with the execution of proper care over sutural borders, over angles and points of adhesion. The mucoperichondrium should be separated thoroughly over the hard parts as far as the removal of cartilage and bone may be expected to extend.

The second important step is the incision through the cartilage made through the original wound and parallel to it without injury to the mucoperichondrium of the opposite side. This is one of the most important steps of the operation, and must be performed with exquisite sensitiveness of feeling and nicety of skill so as not to make a puncture through the perichondrium and mucosa. A puncture is almost certain to be attended with a subsequent perforation, however minute it may be. Very many methods have been suggested to obviate the use of the knife in this procedure, but in my experience, if extreme care is exercised, no other expedient is necessary. If such a misfortune is met with, it is wise to abandon the incision made through the cartilage and make another parallel incision through the cartilage a millimeter back of the original incision, and from this raise the perichondrium of the opposite side over the same area, and with the same care and delicacy with which it has been carried out on the other side. Always be careful to see that the mucoperichondrium on both sides has been well separated down to the floor of the nasal chambers. The third step is the removal of the deflected cartilage and bone between the two flaps which have been formed. Many remove the cartilage and bone between the flaps without any means of protection to the flaps. I consider this method unnecessary and unsafe. I always use the Killian long speculum to widen out the flaps and protect them from injury. The Killian, or some similar form of speculum, should always be used during this stage of the operation. The final procedure is the bringing of the flaps together and holding them in position by a packing of gauze. The gauze is usually removed in twenty-four hours, when union is found to be complete. The foregoing is practically the usual operative procedure. I have varied this slightly in my technique.

From observations which I have made in the clinics and private work of some of the most dexterous and rapid workers in this operative technique, and from my own experience, I early became convinced that cocaine anesthesia was not sufficient to relieve the patient of pain attendant upon its performance; also, that a suffering patient, with loss of fortitude, did not aid in the successful issue of such a delicate operation. In my early work I operated under cocaine anesthesia. In the early stage of the operation, under the use of cocaine, I found the anesthesia all that could be desired, but, as the operation was often prolonged, and the most trying part of the procedure came at the last, I found that most of my patients suffered quite a little pain and shock, and several of them became so demoralized as to render the completion of the operation extremely difficult. I therefore turned to general anesthesia, at first only operating upon those under this method who I feared would not last out under local anesthesia. I found this method so satisfactory that, during the last two years, I have done all my septum operations under general anesthesia. By this method the patient is entirely free from the possibility of pain, and the operator is saved the disquietude resulting from the anxiety and suffering of his patient. The bleeding under general anesthesia is a little greater than under local anesthesia, but I have never found it sufficient to delay or annoy me during the progress of the operation. I have also found it wise to study carefully the relation between the convex surface of the deflection and the alæ of the nose, so that the incision will be made sufficiently well forward to avoid making a failure of the operation, on account of the alæ coming in contact with that portion of the cartilage that is left.

My results by this operation have been uniformly good for the relief of stenosis, contact with the turbinates, or the relief of reflex symptoms. In none of my cases has there been any sinking of the dorsum of the nose. Where there is sufficient bony structure left above and a fair bridge of cartilage anterior to the seat of operation, I doubt if this occurrence can take place. I doubt very much if there is ever a reproduction of cartilage or bone in the area from which it is taken. The flaccid septum becomes tense and later gives a certain firmness of sensation. In several of my cases in which a large portion of the hard septum was removed, my patients have been annoyed for a month or more by the flapping of the flaccid septum. The symptom of which they complained was the frequent alternate occlusion of the nasal cavities, due to the flaccid septum coming in contact with one, then the other, outer wall of the nose. I, unfortunately, have had perforations. Most of my perforations were made during my early operative days, and no doubt were largely the result of want of knowledge of the adequate skill to obviate and overcome the various pitfalls which in this operation present themselves from the very start to the finish of the operation. I know of no operation in which an operator has to be so "keyed" up and so carefully has to scrutinize every move in the technique as is required of a surgeon in this operation. Twice I have had two fairly large perforations to develop from pin-point incisions into the opposite mucoperichondrium at the point opposite the primary incision. In both of these cases I was conscious of the wound, and, before introducing the packing, I closely scrutinized the mucous membrane, hardly being able to note the point of injury; nevertheless, the perforation resulted. In all I have had 3 per cent. of perforations. In my last series of 80 cases I have had only one perforation, and this was one of the 2 described above. Twice when operating I have recognized the fact, from a misfortune, that a perforation would in all probability result if I continued the operation by the submucous method; I therefore discontinued the procedure and resorted to my former method. Perforations resulting after this procedure heal kindly and are not usually attended by crust formation, therefore give no annoyance to patients; in fact, patients are never conscious of their existence unless informed of it. If we could depend upon our confrères to be considerate in not notifying the patients of the existence of a perforation in their noses, they would be of no consequence, except the personal chagrin they cause the operator. During the last three years I have operated upon 190 cases of deflected septum by this method; 22 of the operations were done under local anesthesia, with 3 perforations; 168 were done under general anesthesia, with 5 perforations. During this same period I performed 20 operations by the method formerly employed by me, with only one perforation. The results gained through the two methods of operative procedure have been practically the same, except that, in the submucous operation, the septa presented cosmetically a more perfect appearance.

In sharp, angular deflections the introduction of the index finger into the cavity presenting the angle and gently but firmly forcing it over will cause it to assume a more rounded form so that the separation of the mucoperichondrium can be accomplished with more ease. Great care should also be exercised in seeing that ridges at the junction of the vomer and the maxillary crest have the mucoperichondrium raised so that they may be thoroughly removed. It is better to remove these ridges with the chisel, as through this instrument they can be expeditiously and more satisfactorily removed.

In considering the advantages which the various operations for the correction of the displaced septum offer over one another, we must not lose sight of the personal equation of the operator. Many operators can perform the older methods of straightening with a marked degree of success, and have not the patience or requisite skill to operate by the submucous method. Most operators find that experience is a great teacher in the submucous operation. Manœuvers that seemed almost impossible in the earlier operations become easy of manipulation after many have been done.

1. Conclusions. The old method gives a septum maintaining its anatomical integrity. The submucous operation gives a flaccid septum, minus certain elements formerly considered essential to its anatomical integrity. This removal of the cartilage and bone seems to have no influence upon the function of the parts, unless removed over too great area toward the dorsum of the nose.

2. The operation by the old method requires about ten minutes in its consummation; the submucous requires about one-half hour in actual operating time.

3. The old method requires the wearing of a splint for a week or ten days; the packing in the submucous operation is removed in twenty-four hours.

4. In the old method there is considerable pain and discomfort until the splint is removed; in the submucous there is no postoperative pain.

5. In the old method of operating the patient is confined to bed for several days, and is uncomfortable and feverish until the splint is removed. After the submucous operation the patient is out of bed at the end of twenty-four hours, and at the end of forty-eight hours is practically well.

6. The old method is rarely attended with perforation. I have had only two in my whole experience. Theoretically, the submucous method should be attended with like results; practically, perforations do occur. After performing one hundred and ninety operations by the submucous method and nearly twice as many by the older method, I have become firmly convinced that the submucous method offers the greatest advantages to the patient afflicted with a deflected septum, in the hands of an operator thoroughly skilled in its technique. I know of no operation wherein unskilled and inexperienced hands can do more harm than by this operation. I feel as though I am becoming a strong advocate of the submucous operation, because it gives less discomfort to the patient, it taxes the skill of the operator, and, when satisfactorily done, gives excellent results.

THE FURTHER REPORT OF A CASE OF TRACHEAL SCLEROMA.

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Two years ago I presented to the American Laryngological Association the history of a case of scleroma of the larynx.[1] Ten months later there was a recurrence of the growth and the patient presented herself hoarse and with dyspnœa very marked, and gradually becoming worse. Noting the remarkable results obtained in other cases of external rhinoscleroma by the use of the Röntgen-rays, I felt that their application direct to the part through an opening in the trachea might have a curative effect. In any event tracheotomy was becoming daily more necessary, and if benefit was not to be obtained the patient would be compelled to wear the tube, as had others before her, to prolong her life.

The patient readily consented to the operation and subsequent direct treatment by the Röntgen-rays, and on March 25, 1907, she was admitted to the Mt. Sinai Hospital, in the service of Dr. A. G. Gerster.

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[1] Amer. Jour. Med. Sci., 1907, cxxxiii, 751.

The following are the notes of the examination by myself, on March 28: In the nose half way back on the left side is a grayish-white mass which bleeds very readily when touched and is covered with thick secretion. This mass does not occlude the nose on that side. On the right side is another similar mass partially occluding the nose. In the trachea, below the cords, on a level with the cricoid cartilage, is a mass attached to the wall of the trachea and extending downward. This is an extension and continuation of a condition existing for over a year under my observation, and is a scleroma of the larynx verified by the pathologist's report. The diagnosis is increasing tracheal stenosis due to scleroma, with secondary involvement of the intranasal mucous membrane.

Physical examination on March 30 showed: A fairly well-nourished young woman; facies somewhat dyspnœic; hoarseness: respirations stridulous, difficult, gasping, and considerably prolonged in both phases; percussion signs somewhat diminished, especially posteriorly at the bases; apices free; vocal fremitus diminished; voice and whispering sounds diminished below in front and over the bases posteriorly; numerous sonorous and whistling rales over both lungs, anteriorly and posteriorly; in the axillary regions and over the bases posteriorly numerous moist rales, increased after coughing.

On March 30 Dr. A. G. Gerster did an extensive tracheotomy. The incision extended three and one-half inches from the lower edge of the thyroid cartilage to about three-quarters of an inch above the sternal notch. The isthmus of the thyroid was tied off in two places and divided between ligatures. The cricoid cartilage and tracheal rings were incised, bringing into view the tumefaction of the posterior and lateral aspects of the trachea. The newgrowth was grayish white in appearance, resembling soft mucous polyps readily breaking down, and extending one and one-half inches below the larynx. A large tube was introduced and packing about it to keep the wound open.

On April 1 the packing and tube removed. The edges of the wound were held apart by retractors, and under chloroform anesthesia there was a five-minute exposure to high-frequency current at a distance of eight inches.

April 3: has had frequent paroxysms of coughing. Whenever she sits up, is fed, dressed or in any way disturbed, these coughing spells occur, and frequently vomiting ensues. These phenomena were not present before x-ray treatment.

April 9, 12, 15, and 17: X-ray treatment by Dr. Stern, five- to six-minute exposures.

April 20: The growth has greatly decreased in size, and the trachea looks much wider. Has had no more vomiting and her